

REMARKS:

Claims 1-3 and 5-9, 11 and 13-17 are in the case and presented for consideration.

Attached to this amendment please find a separate listing of the prior art which appeared in the specification as filed in accordance with the Examiner's observation.

Standard headings have been added to the specification and claim 5 has been amended to avoid the indefinite term "for example" and to simply require the angle between the camera axis to be non-zero as supported by the specification.

By this amendment, the application and claims are believed to be in proper form for further examination.

The Examiner has rejected claims 1, 2, 3, 5, 6, 7 and 9-17 as being obvious from British patent GB 2,342,419 to Sefton et al. (hereafter Sefton), taken in view of U.S. Patent 6,621,516 to Wasson.

Claim 8 is also rejected as obvious from a combination of Sefton and Wasson, taken further in view of U.S. Patent 7,073,979 to McGrew et al. (hereafter McGrew).

The Examiner's rejection is respectfully traversed in that it is believed a person of ordinary skill in the art to which the present application pertains would not in fact read the Sefton reference as the Examiner has considered it.

Sefton discloses a pipe inspection device having a forward looking camera 11 shown in Fig. 2, for example, and a side looking camera 15, also shown at Fig. 2.

That is, both cameras have orthogonal lines of sight. Both cameras are mounted in a rotatable housing. The rotation of this housing leads to the front camera 11 being moved around the roll axis of the complete device and the sideways looking camera 15 being moved about the pitch axis of the complete device. This is also apparent from the

windows 7, 9 which allow for such a rotation. The sideways looking camera 15 will always look through circumferential window 9, whereas front camera 11 will always look through front window 7.

On page 2, last paragraph, Sefton discloses that: *“the sideways-looking field of view may extend around the entire housing by providing means for rotating the camera about it’s pitch axis.”*, and: *“Conveniently, the means may also provide for rotation of the camera providing the forward-looking field of view about it’s roll axis.”* It is believed that “it’s” means “the housing’s” not the “camera’s”. If this were not so, a rotation of the sideways-looking camera is about “it’s” roll axis would end up in the camera looking inside the dark housing. It is completely unclear how the only disclosed single rotational drive 29 could be operated in such a way. It is completely unclear why the device of Sefton should do this to the sideways looking camera. Thus, the two cameras of Sefton have always different lines of sight in the operative states.

Sefton has no disclosure of an exposure of a development of the circumference of the inspected pipe section. On page 4 of the reference it is disclosed that the device sends image signals to a monitor on which an operator controls the views. It is also stated on that page that the software will memorize the images taken. There is no disclosure about the development of the circumference, although there is disclosure of inspection of the circumference, but these are two different things. The development of such a surface requires data manipulation and may only be obtained by using a fisheye camera lens.

Apparatus Claim 1 has been amended to better make this distinction and method Claim 9 has been amended in like fashion and also to include the limitations of now canceled Claims 10 and 12 as well.

Issue is also taken with the Examiner’s statement on page 9 of the action regarding Claim 12 and miss-quoting Sefton. The relevant passage from Sefton at page 3, lines 26-

27 actually says that the Sefton casing provides:

“...a sideways-looking field of view about the entire circumference of the device 1 for a further camera 15...”

This is definitely not a wide-angle lens but a rotating camera instead. It is simply not possible to view the entire pipe circumference from the position of camera 15 of Sefton in the middle of the housing 1 with any type of lens. Even if camera 15 would have a fisheye lens (as called for in Claim 6 presented here for example, but nowhere in Sefton), it would not be possible to view the entire circumference since there would be a blind spot behind the body of the camera.

Summing up, the claimed invention differs from Sefton in that both cameras are located on the same optic axis with identical line of sight in their operative states.

Wasson discloses only the mounting of a camera on a carriage in a housing with a gimbaled bearing. According to Wasson, the single camera may look along the longitudinal axis of the pipe or in a radial way. There is no disclosure of two cameras and using two cameras as in Sefton with the Wasson teaching is still remote for the claimed invention for the reasons noted above.

The skilled artisan combining Wasson with Sefton, would maintain the Sefton teaching of having the two cameras looking in different directions at all times since nothing in Wasson would contradict this teaching of Sefton. Only according to the present invention are the two cameras mounted so that they can be individually swung into the forward looking direction. In this way, two different types of views of the same area can be taken, for example, as defined in claim 7, one of the cameras can include a zoom lens. Similarly, as defined in claim 6, one of the cameras may be equipped with a wide-angled fisheye lens. Since, according to Sefton, both cameras are used to view different areas, it is not clear what purpose would be served by providing different types of capacities to

the different cameras since they are looking at different parts of the pipe and would, presumably, both be looking with the same type of resolution and image quality.

In likewise fashion, by adding the McGrew reference for teaching thermal imaging, this would not supplement Sefton and Wasson for the skilled artisan to determine that it would be useful to have both cameras who view the same area and to do this by permitting the housing carrying these cameras to be moved in a way that would allow this purpose.

By this amendment, thus, the application and claims are believed to be in condition for allowance and favorable action is respectfully requested.

No new matter has been added and the Examiner is respectfully invited to telephone the undersigned if any matters remain which can be treated by telephone interview in the interest of reaching a conclusion to the prosecution of this application.

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Respectfully submitted,

/PETER C. MICHALOS/
Peter C. Michalos
Reg. No. 28,643
Attorney for Applicants
(845) 359-7700

NOTARO, MICHALOS & ZACCARIA P.C.
100 Dutch Hill Road
Orangeburg, New York 10962

Customer No. 21706

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